

In re: Sheppard et al.
Serial No.: 10/758,871
Filed: January 16, 2004
Page 10 of 12

REMARKS

Applicants provide the present Amendment responsive to the Election/Restriction (hereinafter "Office Action") mailed August 16, 2005. The Office Actions states:

This application contains claims directed to the following patentably distinct species of the claimed invention:

Species 1 – detailed by figures 1A –1F

Species 2 – detailed by figures 2A and 2B

Species 3 – detailed by figure 3

Species 4 – detailed by figure 4

Species 5 – detailed by figure 5

See Office Action, page 2. As a preliminary note, Applicants would like to point out that the structures illustrated in the Figures are intended to illustrate various embodiments of methods that can be used to form devices according to various embodiments of the present invention. Accordingly, although the figures illustrated may have elements, layers, regions and the like that differ from one another, these elements, layers, regions and the like may be fabricated using any of the methods described in the application. For example, as discussed in the specification of the present application:

While embodiments of the present invention have been described with reference to a two mask process for forming opening gate contact windows and forming gate contacts with a gap to the protective layer 24, Figures 2A and 2B illustrate operations for forming the ohmic contact windows and the ohmic contacts with a single mask. As seen in Figure 2A, a mask 200, such as a photoresist, with a negative bevel may be formed on the protective layer 24. The negative bevel of the mask 200 corresponds to the gap distance between the subsequently formed ohmic contacts 30 and the patterned protective layer 24. The protective layer 24 is isotropically etched using a low damage etch process as described above to provide the contact windows. Thus, the contact windows will be defined by the bottom dimension of the mask 200. A mask layer without a negative bevel could also be used if the etch is isotropic and the low-damage etch is substantially over etched to provide a lateral undercut to the desired spacing.

As seen in Figure 2B, ohmic contact metal 300 is evaporated on the resulting structure. The overhang of the mask 200 defines the location where metal is deposited on the exposed barrier layer 22. Thus, the contact metal 300 is spaced apart from the patterned protective layer 24. **The mask 200 and**

In re: Sheppard et al.
Serial No.: 10/758,871
Filed: January 16, 2004
Page 11 of 12

the metal 300 on the mask 200 are removed to provide the structure of Figure 1C.

See Specification, page 15, lines 16-33. Thus, a one mask or a two mask process may be used to provide the structure of Figure 1C. Thus, Figure 1C illustrates an intermediate structure that may be obtained using more than one method. Accordingly, Applicants submit that the method embodiments of the present invention may be illustrated in multiple figures and do not necessarily correspond to a single figure.

The following table contains a listing of the figures (species) identified in the Office Action and a listing of claims readable thereon:

Figure	Claims
1A-1F	1-6, 8-27, 30-36, 38-40 and 70-81
2A and 2B	1-6, 8-27, 30-36, 38-40 and 70-81
3	1-17, 19-40 and 70-81
4	1-17, 19-40 and 70-81
5	1-6, 8-27, 30-36, 38-40 and 70-81

Applicants elect Claims 1-17, 19-40 and 70-81, which read on embodiments of the present invention illustrated in Figures 3 and 4. Applicants have withdrawn remaining Claim 18 from consideration. Applicants note that since the previous restriction requirement mailed on April 19, 2005 has been withdrawn (*See* Office Action, page 2), Claim 18 should be considered as being withdrawn responsive to Applicants' current response.

Claims 1-6, 8-17, 19-36, 28-40 and 70-81 are generic to all embodiments of the present invention as the recitations of these claims may read on any of the embodiments illustrated in the Figures. Thus, upon allowance of any one of these claims, Applicants respectfully request consideration and allowance of all of the claims that depend therefrom.

In particular, Figures 1A through 1F and 5 illustrate the formation of a protective layer 24 in the gate region of the device prior to formation of the ohmic contacts 30. Figures 3 and 4 illustrate the formation of the ohmic contacts 30 prior to

In re: Sheppard et al.
Serial No.: 10/758,871
Filed: January 16, 2004
Page 12 of 12

formation of the protective layer 40. In either case, the protective layer (24, 40) may remain or be removed prior to formation of a passivation layer and the gate contact may be formed prior to formation of the passivation layer or subsequent to formation of the passivation layer. Furthermore, in some embodiments, the protective layer may provide the passivation layer (*See* Claim 71). Thus, as described on page 16 of the Specification, "the structure of Figure 4 may be provided utilizing the steps illustrated in Figures 1A through 1F with the protective layer 21 being removed prior to or subsequent to the formation of the gate contact 32." *See* Specification, page 16, lines 30-33. Thus, Figures 1A through 1F are not limited to the formation of a passivation layer after the formation of a gate. Accordingly, for at least these reasons, Applicants submit that the difference between the methods illustrated with reference to Figures 3 and 4 and those illustrated with reference to Figures 1A through 1F is the formation of the ohmic contact metal before forming the protective layer (Figures 1A-1F) or after formation of the protective layer (Figures 3 and 4). Thus, the claims that are not generic to all embodiments of the present invention are claims directed to when the protective layer are formed, *i.e.*, Claims 7, 28, 29 and 37 (Figures 3 and 4) and Claim 18 (Figures 1A-1F, 2A, 2B and 5).

Accordingly, Applicants respectfully request examination and allowance of Claims 1-40 and 70-81 for at least the reasons discussed above.

Respectfully submitted,

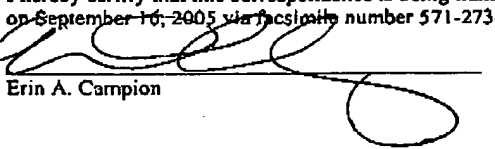


Elizabeth A. Stanek
Registration No. 48,568

USPTO Customer No. 20792
Myers Bigel Sibley & Sajovec, P.A.
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401

CERTIFICATION OF FACSIMILE TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted by facsimile to the U.S. Patent and Trademark Office on September 16, 2005 via facsimile number 571-273-8300.



Erin A. Campion